APPENDIX 2: ASSEMBLY CODE

TITLE: ACCEPTING USER CONTROL

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Reserved.
PM_USED                   EQU   1

          INCLUDE    "16F819.INC"


; Define statements.
#define        adc_bits              8
#define        adc_clock             3
#define        adc_sampleus          50

RAM_START                 EQU   00020h
RAM_END                   EQU   0016Fh
RAM_BANKS                 EQU   00003h
BANK0_START               EQU   00020h
BANK0_END                 EQU   0007Fh
BANK1_START               EQU   000A0h
BANK1_END                 EQU   000EFh
BANK2_START               EQU   00120h
BANK2_END                 EQU   0016Fh
EEPROM_START              EQU   02100h
EEPROM_END                EQU   021FFh

R0                  EQU   RAM_START + 000h
R1                  EQU   RAM_START + 002h
R2                  EQU   RAM_START + 004h
R3                  EQU   RAM_START + 006h
R4                  EQU   RAM_START + 008h
R5                  EQU   RAM_START + 00Ah
R6                  EQU   RAM_START + 00Ch
R7                  EQU   RAM_START + 00Eh
R8                  EQU   RAM_START + 010h
T1                  EQU   RAM_START + 012h
T2                  EQU   RAM_START + 014h
FLAGS               EQU   RAM_START + 016h
GOP                 EQU   RAM_START + 017h
RM1                 EQU   RAM_START + 018h
RM2                 EQU   RAM_START + 019h
RR1                 EQU   RAM_START + 01Ah
RR2                 EQU   RAM_START + 01Bh
_buffer             EQU   RAM_START + 01Ch
_zone_buff                EQU   RAM_START + 01Fh
_bufcount                 EQU   RAM_START + 022h
_counterA                 EQU   RAM_START + 024h
```

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_counterB                   EQU   RAM_START + 026h
_counterC                   EQU   RAM_START + 028h
_counterD                   EQU   RAM_START + 02Ah
_mode             EQU   RAM_START + 02Ch
_current_zone               EQU   RAM_START + 02Eh
_dir              EQU   RAM_START + 02Fh
_old_PlusMinus              EQU   RAM_START + 030h
PB01              EQU   RAM_START + 031h
PB02              EQU   RAM_START + 032h
PB03              EQU   RAM_START + 033h
_PlusMinus                  EQU   RAM_START + 034h
_prev_zone                  EQU   RAM_START + 035h
_pulsedata                  EQU   RAM_START + 036h
_res_value                  EQU   RAM_START + 037h
_ticcount         EQU   RAM_START + 038h
_value            EQU   RAM_START + 039h
_zone             EQU   RAM_START + 03Ah
_PORTL                      EQU   PORTB
_PORTH                      EQU   PORTA
_TRISL                      EQU   TRISB
_TRISH                      EQU   TRISA
#define _switch     _PORTA_0
#define _tx         _PORTB_2
#define _tx2        _PORTB_7
#define _pinA       _PORTA_3
#define _pinB       _PORTA_4
#define _pinC       _PORTB_0
#define _pinD       _PORTB_1
#define _tempstateA         PB03, 000h
#define _tempstateB         PB03, 001h
#define _tempstateC         PB03, 002h
#define _tempstateD         PB03, 003h
#define _prevstateA         PB02, 000h
#define _prevstateB         PB02, 001h
#define _prevstateC         PB02, 002h
#define _prevstateD         PB02, 003h
#define _stateA     PB02, 004h
#define _stateB     PB02, 005h
#define _stateC     ·PB02, 006h
#define _stateD     PB02, 007h
#define _flagA      PB01, 000h
#define _flagAP             PB01, 001h
#define _flagB      PB01, 002h
#define _flagBP             PB01, 003h
#define _flagC      PB01, 004h
#define _flagCP             PB01, 005h
```

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```
#define _flagD          PB01, 006h
#define _flagDP              .        PB01, 007h
#define _OPTION_REG_7    OPTION_REG, 007h
#define _PORTA_0         PORTA, 000h
#define _PORTB_2         PORTB, 002h
#define _PORTB_7         PORTB, 007h
#define _PORTA_3         PORTA, 003h
#define _PORTA_4         PORTA, 004h
#define _PORTB_0         PORTB, 000h
#define _PORTB_1         PORTB, 001h
#define _pulsedata_0         _pulsedata, 000h
#define _pulsedata_1         _pulsedata, 001h
#define _pulsedata_2         _pulsedata, 002h
#define _pulsedata_3         _pulsedata, 003h
#define _dir_0           _dir, 000h
#define _dir_1           _dir, 001h
#define _dir_2           _dir, 002h

; Constants.
_limit               EQU    00003h
        INCLUDE     "SNAPPE~2.MAC"
        INCLUDE     "PBPPIC14.LIB"

        MOVE?CT     000h, _OPTION_REG_7
        MOVE?CB     00Eh, ADCON1
    .   MOVE?CW     0BCh, _mode
        INPUT?T     _switch
        INPUT?T     _pinA
        INPUT?T     _pinB
        INPUT?T     _pinC
        INPUT?T     _pinD
        MOVE?CB     000h, _ticcount
        MOVE?CB     000h, _dir
        MOVE?CB     000h, _pulsedata
        MOVE?CT     000h, _flagA
        MOVE?CT     000h, _flagAP
        MOVE?CT     000h, _flagB
        MOVE?CT     000h, _flagBP
        MOVE?CT     000h, _flagC
        MOVE?CT     000h, _flagCP
        MOVE?CT     000h, _flagD
        MOVE?CT     000h, _flagDP
        MOVE?TT     _pinA, _stateA
        MOVE?TT     _pinB, _stateB
        MOVE?TT     _pinC, _stateC
        MOVE?TT     _pinD, _stateD
```

```
MOVE?TT      _pinA, _prevstateA
MOVE?TT      _pinB, _prevstateB
MOVE?TT      _pinC, _prevstateC
MOVE?TT      _pinD, _prevstateD
MOVE?TT      _pinA, _tempstateA
MOVE?TT      _pinB, _tempstateB
MOVE?TT      _pinC, _tempstateC
MOVE?TT      _pinD, _tempstateD
MOVE?CW      _limit, _counterA
MOVE?CW      _limit, _counterB
MOVE?CW      _limit, _counterC
MOVE?CW      _limit, _counterD
MOVE?CB      0FFh, _zone_buff
MOVE?CB      0FFh, _zone_buff + 00001h
MOVE?CB      0FFh, _zone_buff + 00002h
MOVE?CB      000h, _zone
MOVE?CB      000h, _prev_zone
MOVE?CB      000h, _current_zone
ADCIN?CB     002h, _value
MOVE?BB      _value, _value
MOVE?BB      _value, _res_value

LABEL?L      _bufinit
MOVE?CB      0FFh, _buffer
MOVE?CB      0FFh, _buffer + 00001h
MOVE?CB      0FFh, _buffer + 00002h
MOVE?CW      000h, _bufcount

LABEL?L      _main
GOSUB?L      _Rotory
GOSUB?L      _Direction
GOSUB?L      _BufStuff
GOSUB?L      _Display
GOSUB?L      _resvalue
GOSUB?L      _Look
GOSUB?L      _a2dbuffer
GOSUB?L      _Press_Test
GOSUB?L      _Release_test
GOTO?L       _main

LABEL?L      _initialize
MOVE?TT      _pinA, _stateA
MOVE?TT      _pinB, _stateB
MOVE?TT      _pinC, _stateC
MOVE?TT      _pinD, _stateD
MOVE?TT      _pinA, _prevstateA
```

```
MOVE?TT     _pinB, _prevstateB
MOVE?TT     _pinC, _prevstateC
MOVE?TT     _pinD, _prevstateD
RETURN?

LABEL?L     _Rotory
GOSUB?L     _CheckPinA
GOSUB?L     _CheckPinB
GOSUB?L     _CheckPinC
GOSUB?L     _CheckPinD
CMPEQ?TCB _flagA, 001h, T1
CMPEQ?TCB _flagB, 001h, T2
LOR?BBW     T1, T2, T2
CMPF?WL     T2, L00001
MOVE?TT     _prevstateA, _pulsedata_0
MOVE?TT     _prevstateB, _pulsedata_1
MOVE?TT     _stateA, _pulsedata_2
MOVE?TT     _stateB, _pulsedata_3
MOVE?CT     000h, _flagA
MOVE?CT     000h, _flagB
MOVE?CW     000h, _bufcount
GOTO?L      L00002
LABEL?L     L00001
CMPEQ?TCB _flagC, 001h, T1
CMPEQ?TCB _flagD, 001h, T2
LOR?BBW     T1, T2, T2
CMPF?WL     T2, L00003
MOVE?TT     _prevstateC, _pulsedata_0
MOVE?TT     _prevstateD, _pulsedata_1
MOVE?TT     _stateC, _pulsedata_2
MOVE?TT     _stateD, _pulsedata_3
MOVE?CT     000h, _flagC
MOVE?CT     000h, _flagD
MOVE?CW     000h, _bufcount
LABEL?L     L00003
LABEL?L     L00002

LABEL?L     _exit_rotory
RETURN?

LABEL?L     _CheckPinA
CMPNE?WCL         _counterA, _limit, L00005
GOTO?L      _statecheckA
GOTO?L      L00006
LABEL?L     L00005
ADD?WCW     _counterA, 001h, _counterA
```

```
GOTO?L          _countercheckA
LABEL?L         L00006

LABEL?L         _countercheckA
CMPNE?WCL          _counterA, _limit, L00007
CMPEQ?TTL _tempstateA, _pinA, L00009
GOTO?L          _resetcounterA
GOTO?L          L00010
LABEL?L         L00009
MOVE?TT         _stateA, _prevstateA
MOVE?TT         _tempstateA, _stateA
MOVE?CT         001h, _flagA
MOVE?CT         001h, _flagAP
GOTO?L          _exitA
LABEL?L         L00010
GOTO?L          L00008
LABEL?L         L00007
GOTO?L          _tempstatecheckA
LABEL?L         L00008

LABEL?L         _tempstatecheckA
CMPEQ?TTL _tempstateA, _pinA, L00011
GOTO?L          _resetcounterA
GOTO?L          L00012
LABEL?L         L00011
GOTO?L          _exitA
LABEL?L         L00012

LABEL?L         _statecheckA
CMPEQ?TTL _stateA, _pinA, L00013
GOTO?L          _resetcounterA
GOTO?L          L00014
LABEL?L         L00013
GOTO?L          _exitA
LABEL?L         L00014

LABEL?L         _resetcounterA
MOVE?CT         000h, _flagA
MOVE?CW         000h, _counterA
MOVE?TT         _pinA, _tempstateA

LABEL?L         _exitA
RETURN?

LABEL?L         _CheckPinB
CMPNE?WCL          _counterB, _limit, L00015
```

```
GOTO?L       _statecheckB
GOTO?L       L00016
LABEL?L      L00015
ADD?WCW      _counterB, 001h, _counterB
GOTO?L       _countercheckB
LABEL?L      L00016


LABEL?L      _countercheckB
CMPNE?WCL          _counterB, _limit, L00017
CMPEQ?TTL _tempstateB, _pinB, L00019
GOTO?L       _resetcounterB
GOTO?L       L00020
LABEL?L      L00019
MOVE?TT      _stateB, _prevstateB
MOVE?TT      _tempstateB, _stateB
MOVE?CT      001h, _flagB
MOVE?CT      001h, _flagBP
GOTO?L       _exitB
LABEL?L      L00020
GOTO?L       L00018
LABEL?L      L00017
GOTO?L       _tempstatecheckB
LABEL?L      L00018


LABEL?L      _tempstatecheckB
CMPEQ?TTL _tempstateB, _pinB, L00021
GOTO?L       _resetcounterB
GOTO?L       L00022
LABEL?L      L00021
GOTO?L       _exitB
LABEL?L      L00022


LABEL?L      _statecheckB
CMPEQ?TTL _stateB, _pinB, L00023
GOTO?L       _resetcounterB
GOTO?L       L00024
LABEL?L      L00023
GOTO?L       _exitB
LABEL?L      L00024


LABEL?L      _resetcounterB
MOVE?CT      000h, _flagB
MOVE?CW      000h, _counterB
MOVE?TT      _pinB, _tempstateB


LABEL?L      _exitB
```

```
RETURN?

LABEL?L      _CheckPinC
CMPNE?WCL          _counterC, _limit, L00025
GOTO?L      ' _statecheckC
GOTO?L      L00026
LABEL?L     L00025
ADD?WCW    _counterC, 001h, _counterC
GOTO?L      _countercheckC
LABEL?L     L00026

LABEL?L      _countercheckC
CMPNE?WCL          _counterC, _limit, L00027
CMPEQ?TTL _tempstateC, _pinC, L00029
GOTO?L      _resetcounterC
GOTO?L      L00030
LABEL?L     L00029
MOVE?TT     _stateC, _prevstateC
MOVE?TT     _tempstateC, _stateC
MOVE?CT     001h, _flagC
MOVE?CT     001h, _flagCP
GOTO?L      _exitC
LABEL?L     L00030
GOTO?L      L00028
LABEL?L     L00027
GOTO?L      _tempstatecheckC
LABEL?L     L00028

LABEL?L      _tempstatecheckC
CMPEQ?TTL _tempstateC, _pinC, L00031
GOTO?L      _resetcounterC
GOTO?L      L00032
LABEL?L     L00031
GOTO?L      _exitC
LABEL?L     L00032

LABEL?L      _statecheckC
CMPEQ?TTL _stateC, _pinC, L00033
GOTO?L      _resetcounterC
GOTO?L      L00034
LABEL?L     L00033
GOTO?L      _exitC
LABEL?L     L00034

LABEL?L      _resetcounterC
MOVE?CT     000h, _flagC
```

```
MOVE?CW    000h, _counterC
MOVE?TT    _pinC, _tempstateC

LABEL?L    _exitC
RETURN?

LABEL?L    _CheckPinD
CMPNE?WCL        _counterD, _limit, L00035
GOTO?L     _statecheckD
GOTO?L     L00036
LABEL?L    L00035
ADD?WCW    _counterD, 001h, _counterD
GOTO?L     _countercheckD
LABEL?L    L00036

LABEL?L    _countercheckD
CMPNE?WCL        _counterD, _limit, L00037
CMPEQ?TTL _tempstateD, _pinD, L00039
GOTO?L     _resetcounterD
GOTO?L     L00040
LABEL?L    L00039
MOVE?TT    _stateD, _prevstateD
MOVE?TT    _tempstateD, _stateD
MOVE?CT    001h, _flagD
MOVE?CT    001h, _flagDP
GOTO?L     _exitD
LABEL?L    L00040
GOTO?L     L00038
LABEL?L    L00037
GOTO?L     _tempstatecheckD
LABEL?L    L00038

LABEL?L    _tempstatecheckD
CMPEQ?TTL _tempstateD, _pinD, L00041
GOTO?L     _resetcounterD
GOTO?L     L00042
LABEL?L    L00041
GOTO?L     _exitD
LABEL?L    L00042

LABEL?L    _statecheckD
CMPEQ?TTL _stateD, _pinD, L00043
GOTO?L     _resetcounterD
GOTO?L     L00044
LABEL?L    L00043
GOTO?L     _exitD
```

```
LABEL?L      L00044

LABEL?L      _resetcounterD
MOVE?CT      000h, _flagD
MOVE?CW      000h, _counterD
MOVE?TT      _pinD, _tempstateD

LABEL?L      _exitD
RETURN?

LABEL?L      _BufStuff
CMPEQ?BCB _buffer + 00001h, 0FFh, T1
CMPEQ?BCB _buffer + 00002h, 0FFh, T2
LOR?BBW      T1, T2, T2
CMPF?WL      T2, L00045
GOTO?L       _shift
GOTO?L       L00046
LABEL?L      L00045
MOVE?BT      _buffer, _dir_0
MOVE?BT      _buffer + 00001h, _dir_1
MOVE?BT      _buffer + 00002h, _dir_2
LABEL?L      L00046
GOSUB?L      _ClockCounterClock

LABEL?L      _shift
MOVE?BB      _buffer + 00001h, _buffer + 00002h
MOVE?BB      _buffer, _buffer + 00001h
RETURN?

LABEL?L      _Direction
CMPEQ?BCL _pulsedata, 00Fh, L00049
CMPEQ?BCL _pulsedata, 00Ah, L00050
CMPEQ?BCL _pulsedata, 005h, L00051
CMPNE?BCL _pulsedata, 000h, L00052

LABEL?L      L00049

LABEL?L      L00050

LABEL?L      L00051
MOVE?CB      0FFh, _buffer
GOTO?L       L00048
LABEL?L      L00052
CMPEQ?BCL _pulsedata, 00Eh, L00053
CMPEQ?BCL _pulsedata, 008h, L00054
CMPEQ?BCL _pulsedata, 007h, L00055
```

```
CMPNE?BCL _pulsedata, 001h, L00056

LABEL?L      L00053

LABEL?L      L00054

LABEL?L      L00055
MOVE?CB      001h, _buffer
GOTO?L       L00048
LABEL?L      L00056
CMPEQ?BCL _pulsedata, 00Dh, L00057
CMPEQ?BCL _pulsedata, 00Bh, L00058
CMPEQ?BCL _pulsedata, 004h, L00059
CMPNE?BCL _pulsedata, 002h, L00060

LABEL?L      L00057

LABEL?L      L00058

LABEL?L      L00059
MOVE?CB      000h, _buffer
GOTO?L       L00048
LABEL?L      L00060
CMPEQ?BCL _pulsedata, 00Ch, L00061
CMPEQ?BCL _pulsedata, 009h, L00062
CMPEQ?BCL _pulsedata, 006h, L00063
CMPNE?BCL _pulsedata, 003h, L00064

LABEL?L      L00061

LABEL?L      L00062

LABEL?L      L00063
MOVE?CB      0FFh, _buffer
LABEL?L      L00064
LABEL?L      L00048
RETURN?

LABEL?L      _ClockCounterClock
CMPEQ?BCL _dir, 004h, L00067
CMPEQ?BCL _dir, 002h, L00068
CMPEQ?BCL _dir, 001h, L00069
CMPNE?BCL _dir, 000h, L00070

LABEL?L      L00067
```

```
LABEL?L      L00068

LABEL?L      L00069
MOVE?CB      02Dh, _PlusMinus
GOTO?L       L00066
LABEL?L      L00070
CMPEQ?BCL _dir, 007h, L00071
CMPEQ?BCL _dir, 006h, L00072
CMPEQ?BCL _dir, 005h, L00073
CMPNE?BCL _dir, 003h, L00074

LABEL?L      L00071

LABEL?L      L00072

LABEL?L      L00073
MOVE?CB      02Bh, _PlusMinus
LABEL?L      L00074
LABEL?L      L00066
RETURN?

LABEL?L      _Display
CMPEQ?TCB _flagAP, 001h, T1
CMPEQ?TCB _flagBP, 001h, T2
LAND?BBW  T1, T2, T2
CMPF?WL    T2, L00075
CMPEQ?BBL _old_PlusMinus, _PlusMinus, L00077
MOVE?BB    _PlusMinus, _old_PlusMinus
LABEL?L      L00077
CMPNE?BCL _PlusMinus, 02Dh, L00079
SUB?BCB      _ticcount, 001h, _ticcount
CMPEQ?BCB _ticcount, 000h, T1
CMPEQ?BCB _ticcount, 0FFh, T2
LOR?BBW    T1, T2, T2
CMPF?WL    T2, L00081
MOVE?CB      01Eh, _ticcount
LABEL?L      L00081
SEROUT2DPIN?T    _tx
SEROUT2MODE?W _mode
SEROUT2PACE?C    000h
SEROUT2?C 024h
SEROUT2?C 04Ch
SEROUT2?C 02Bh
SEROUT2?C 02Ah
GOTO?L       L00080
LABEL?L      L00079
```

```
ADD?BCB      _ticcount, 001h, _ticcount
CMPNE?BCL _ticcount, 01Fh, L00083
MOVE?CB     001h, _ticcount
LABEL?L      L00083
SEROUT2DPIN?T    _tx
SEROUT2MODE?W _mode
SEROUT2PACE?C   000h
SEROUT2?C 024h
SEROUT2?C 04Ch
SEROUT2?C 02Dh
SEROUT2?C 02Ah
LABEL?L      L00080
GOSUB?L      _initialize
MOVE?CT     000h, _flagAP
MOVE?CT     000h, _flagBP
LABEL?L      L00075
CMPEQ?TCB _flagCP, 001h, T1
CMPEQ?TCB _flagDP, 001h, T2
LAND?BBW  T1, T2, T2
CMPF?WL     T2, L00085
CMPEQ?BBL _old_PlusMinus, _PlusMinus, L00087
MOVE?BB     _PlusMinus, _old_PlusMinus
LABEL?L      L00087
CMPNE?BCL _PlusMinus, 02Dh, L00089
SUB?BCB      _ticcount, 001h, _ticcount
CMPEQ?BCB _ticcount, 000h, T1
CMPEQ?BCB _ticcount, 0FFh, T2
LOR?BBW     T1, T2, T2
CMPF?WL     T2, L00091
MOVE?CB     01Eh, _ticcount
LABEL?L      L00091
SEROUT2DPIN?T    _tx
SEROUT2MODE?W _mode
SEROUT2PACE?C   000h
SEROUT2?C 024h
SEROUT2?C 052h
SEROUT2?C 02Bh
SEROUT2?C 02Ah
GOTO?L       L00090
LABEL?L      L00089
ADD?BCB      _ticcount, 001h, _ticcount
CMPNE?BCL _ticcount, 01Fh, L00093
MOVE?CB     001h, _ticcount
LABEL?L      L00093
SEROUT2DPIN?T    _tx
SEROUT2MODE?W _mode
```

```
SEROUT2PACE?C   000h
SEROUT2?C  024h
SEROUT2?C  052h
SEROUT2?C  02Dh
SEROUT2?C  02Ah
LABEL?L      L00090
GOSUB?L      _initialize
MOVE?CT      000h, _flagCP
MOVE?CT      000h, _flagDP
LABEL?L      L00085
RETURN?


LABEL?L      _resvalue
ADCIN?CB     000h, _value
CMPEQ?BBL_res_value, _value, L00095
PAUSE?C      032h
MOVE?BB      _value, _res_value
GOTO?L       _resvalue
LABEL?L      L00095
MOVE?BB      _value, _res_value


LABEL?L      _exit_resval
RETURN?


LABEL?L      _Look
CMPEQ?BCL_res_value, 06Ah, L00099
CMPEQ?BCL_res_value, 069h, L00100
CMPNE?BCL_res_value, 068h, L00101


LABEL?L      L00099


LABEL?L      L00100
MOVE?CB      031h, _zone_buff
GOTO?L       L00098
LABEL?L      L00101
CMPEQ?BCL_res_value, 05Fh, L00102
CMPEQ?BCL_res_value, 05Eh, L00103
CMPEQ?BCL_res_value, 05Dh, L00104
CMPNE?BCL_res_value, 05Ch, L00105


LABEL?L      L00102


LABEL?L      L00103


LABEL?L      L00104
MOVE?CB      036h, _zone_buff
```

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```
GOTO?L      L00098
LABEL?L     L00105
CMPEQ?BCL _res_value, 0B5h, L00106
CMPEQ?BCL _res_value, 0B4h, L00107
CMPEQ?BCL _res_value, 0B3h, L00108
CMPNE?BCL _res_value, 0B2h, L00109

LABEL?L     L00106

LABEL?L     L00107

LABEL?L     L00108
MOVE?CB     032h, _zone_buff
GOTO?L      L00098
LABEL?L     L00109
CMPEQ?BCL _res_value, 079h, L00110
CMPEQ?BCL _res_value, 078h, L00111
CMPEQ?BCL _res_value, 077h, L00112
CMPEQ?BCL _res_value, 076h, L00113
CMPNE?BCL _res_value, 075h, L00114

LABEL?L     L00110

LABEL?L     L00111

LABEL?L     L00112

LABEL?L     L00113
MOVE?CB     035h, _zone
GOTO?L      L00098
LABEL?L     L00114
CMPEQ?BCL _res_value, 065h, L00115
CMPEQ?BCL _res_value, 064h, L00116
CMPEQ?BCL _res_value, 063h, L00117
CMPEQ?BCL _res_value, 062h, L00118
CMPNE?BCL _res_value, 061h, L00119

LABEL?L     L00115

LABEL?L     L00116

LABEL?L     L00117

LABEL?L     L00118
MOVE?CB     038h, _zone
GOTO?L      L00098
```

```
LABEL?L      L00119
CMPEQ?BCL _res_value, 0D6h, L00120
CMPEQ?BCL _res_value, 0D5h, L00121
CMPEQ?BCL _res_value, 0D4h, L00122
CMPEQ?BCL _res_value, 0D3h, L00123
CMPNE?BCL _res_value, 0D2h, L00124

LABEL?L      L00120

LABEL?L      L00121

LABEL?L      L00122

LABEL?L      L00123
MOVE?CB      033h, _zone_buff
GOTO?L       L00098
LABEL?L      L00124
CMPEQ?BCL _res_value, 083h, L00125
CMPEQ?BCL _res_value, 082h, L00126
CMPNE?BCL _res_value, 081h, L00127

LABEL?L      L00125

LABEL?L      L00126
MOVE?CB      037h, _zone_buff
GOTO?L       L00098
LABEL?L      L00127
CMPEQ?BCL _res_value, 090h, L00128
CMPEQ?BCL _res_value, 08Fh, L00129
CMPEQ?BCL _res_value, 08Eh, L00130
CMPNE?BCL _res_value, 08Dh, L00131

LABEL?L      L00128

LABEL?L      L00129

LABEL?L      L00130
MOVE?CB      034h, _zone_buff
GOTO?L       L00098
LABEL?L      L00131
MOVE?CB      000h, _zone_buff
LABEL?L      L00098

LABEL?L      _exit_lookup
RETURN?
```

A2-16

```
LABEL?L      _a2dbuffer
CMPEQ?BCB _zone_buff + 00001h, 0FFh, T1
CMPEQ?BCB _zone_buff + 00002h, 0FFh, T2 .
LOR?BBW     T1, T2, T2
CMPF?WL     T2, L00132
GOTO?L       _buff_shift
LABEL?L      L00132
CMPNE?BBL _zone_buff, _zone_buff + 00001h, L00134
MOVE?BB     _zone_buff, _zone
GOTO?L       _clear_buff
LABEL?L      L00134
CMPNE?BBL _zone_buff, _zone_buff + 00002h, L00136
MOVE?BB     _zone_buff, _zone
GOTO?L       _clear_buff
LABEL?L      L00136          ·
CMPNE?BBL _zone_buff + 00001h, _zone_buff + 00002h, L00138
MOVE?BB     _zone_buff + 00001h, _zone
GOTO?L       _clear_buff
LABEL?L      L00138

LABEL?L      _clear_buff
MOVE?CB     0FFh, _zone_buff
MOVE?CB     0FFh, _zone_buff + 00001h
MOVE?CB     0FFh, _zone_buff + 00002h
PAUSEUS?C 064h
GOTO?L       _exit_a2dbuffer

LABEL?L      _buff_shift
MOVE?BB     _zone_buff + 00001h, _zone_buff + 00002h
MOVE?BB     _zone_buff, _zone_buff + 00001h

LABEL?L      _exit_a2dbuffer
RETURN?

LABEL?L      _Press_Test
CMPEQ?BBL _zone, _current_zone, L00140
CMPEQ?BCL _zone, 000h, L00142
MOVE?BB     _zone, _current_zone
GOSUB?L      _press
LABEL?L      L00142
LABEL?L      L00140

LABEL?L      _exit_press_test
RETURN?

LABEL?L      _Release_test
```

A2-17

```
CMPEQ?BBL _zone, _current_zone, L00144
GOSUB?L      _release
MOVE?BB      _zone, _current_zone
LABEL?L      L00144

LABEL?L      _exit_rel_test
RETURN?

LABEL?L      _press
SEROUT2DPIN?T    _tx
SEROUT2MODE?W _mode
SEROUT2PACE?C    000h
SEROUT2?C 024h
SEROUT2?B _zone
SEROUT2?C 050h
SEROUT2?C 02Ah
SEROUT2DPIN?T    _tx2
SEROUT2MODE?W _mode
SEROUT2PACE?C    000h
SEROUT2?C 052h
SEROUT2?C 065h
SEROUT2?C 073h
SEROUT2?C 020h
SEROUT2?C 056h
SEROUT2?C 061h
SEROUT2?C 06Ch
SEROUT2?C 075h
SEROUT2?C 065h
SEROUT2?C 020h
SEROUT2COUNT?C000h
SEROUT2NUM?B    _res_value
SEROUT2DEC?
SEROUT2?C 00Dh
SEROUT2?C 00Ah

LABEL?L      _exit_press
RETURN?

LABEL?L      _release
SEROUT2DPIN?T    _tx
SEROUT2MODE?W _mode
SEROUT2PACE?C    000h
SEROUT2?C 024h
SEROUT2?B _current_zone
SEROUT2?C 052h
SEROUT2?C 02Ah
```

```
LABEL?L     _exit_release
RETURN?

END
```